(12) UK Patent Application (19) GB (11) 2 080 514 A

(21) Application No 8121129
(22) Date of filing 8 Jul 1981
(30) Priority data
(31) 8018547U
(32) 10 Jul 1980
(31) 3113067
(32) 1 Apr 1981
(33) Fed. Rep. of Germany (DE)
(43) Application published
3 Feb 1982
(51) INT CL³
F23D 3/24
(52) Domestic classification
F4T F
(56) Documents cited
GB 1514338
GB 353356
US 3905754
(58) Field of search
F4T
(71) Applicant
Gerd Knobel,
Epplestrasse 81, D-7000
Stuttgart 70, West
Germany
(72) Inventor
Gerd Knobel
(74) Agents
E. N. Lewis & Taylor,
144 New Walk, Leicester,
LE1 7JA

(54) Wick Holder for a Lamp and Wicks Held Therein

(57) A lamp whose receptacle 1 contains a supply of fragmentized wax or oil has a two-piece wick holder whose tubular lower section 5 has several heat-dissipating legs 13—16 bonded to the bottom wall of the receptacle. The tubular upper section 3 of the holder is partially and separably telescoped into the lower section, and its upper end portion has several prongs 7—10 which surround the upper end portion of the wick and are heated by the flame when the lamp is in use. The lower end portion of the upper section or the legs of the lower section define a chamber 19-1 for one or more loops or convolutions of the wick. The latter has inter-twisted and/or interlaced and/or interwoven filaments some of which may consist of metallic wire.

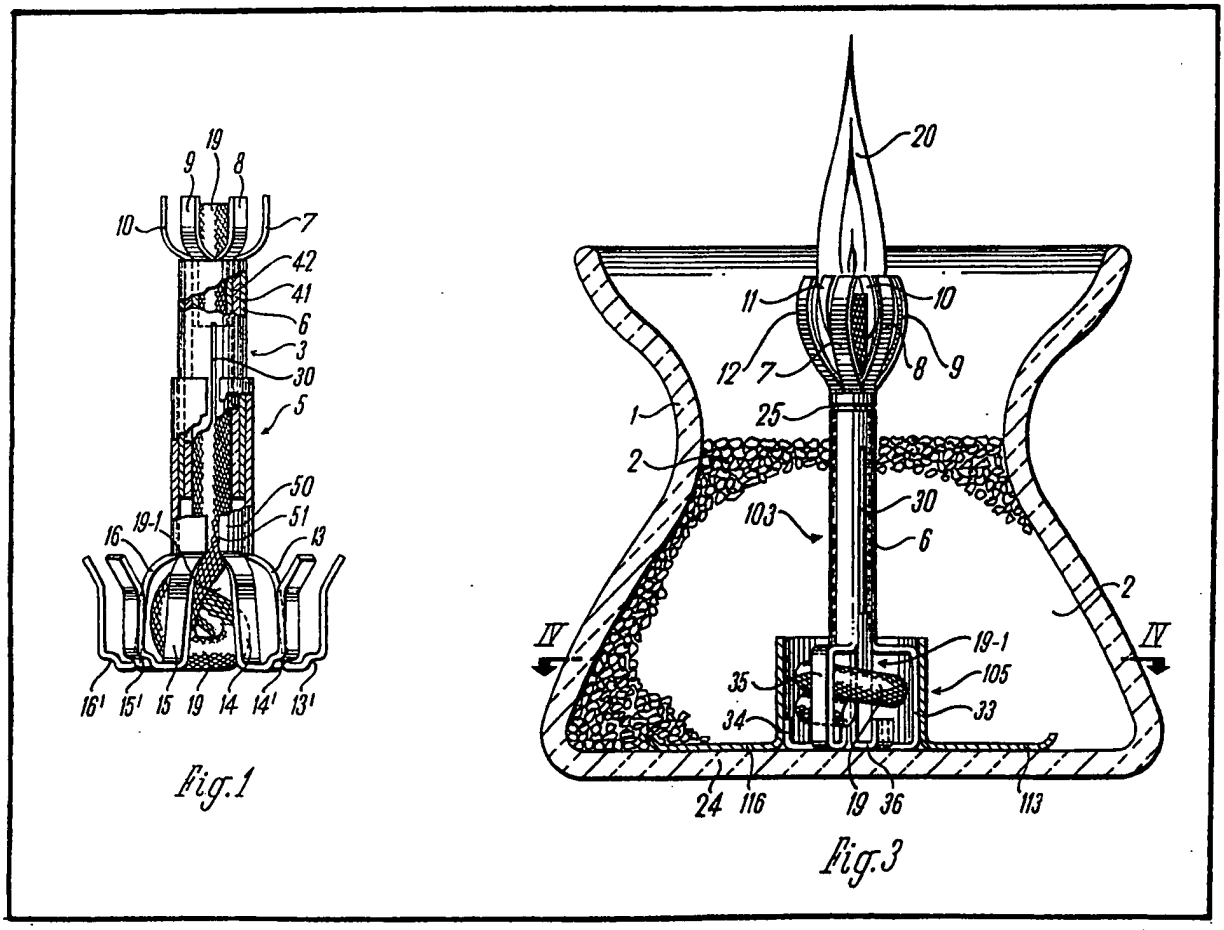

Fig.1

Fig.3

GB 2 080 514 A

2080511

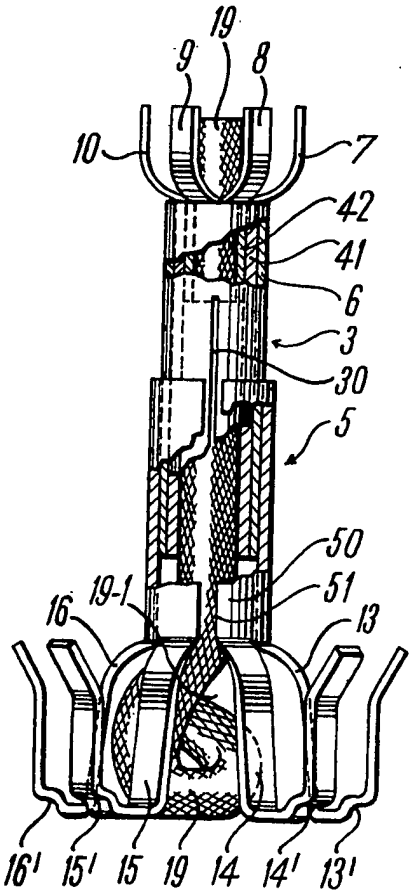

Fig.1

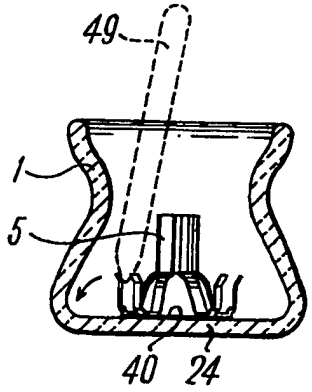

Fig.2a

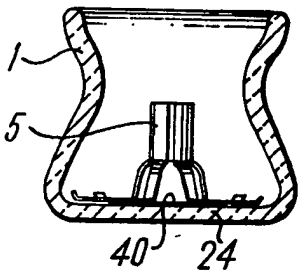

Fig.2b

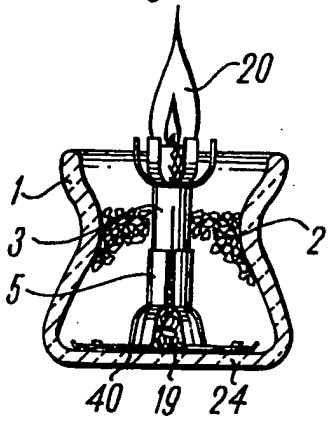

Fig.2c

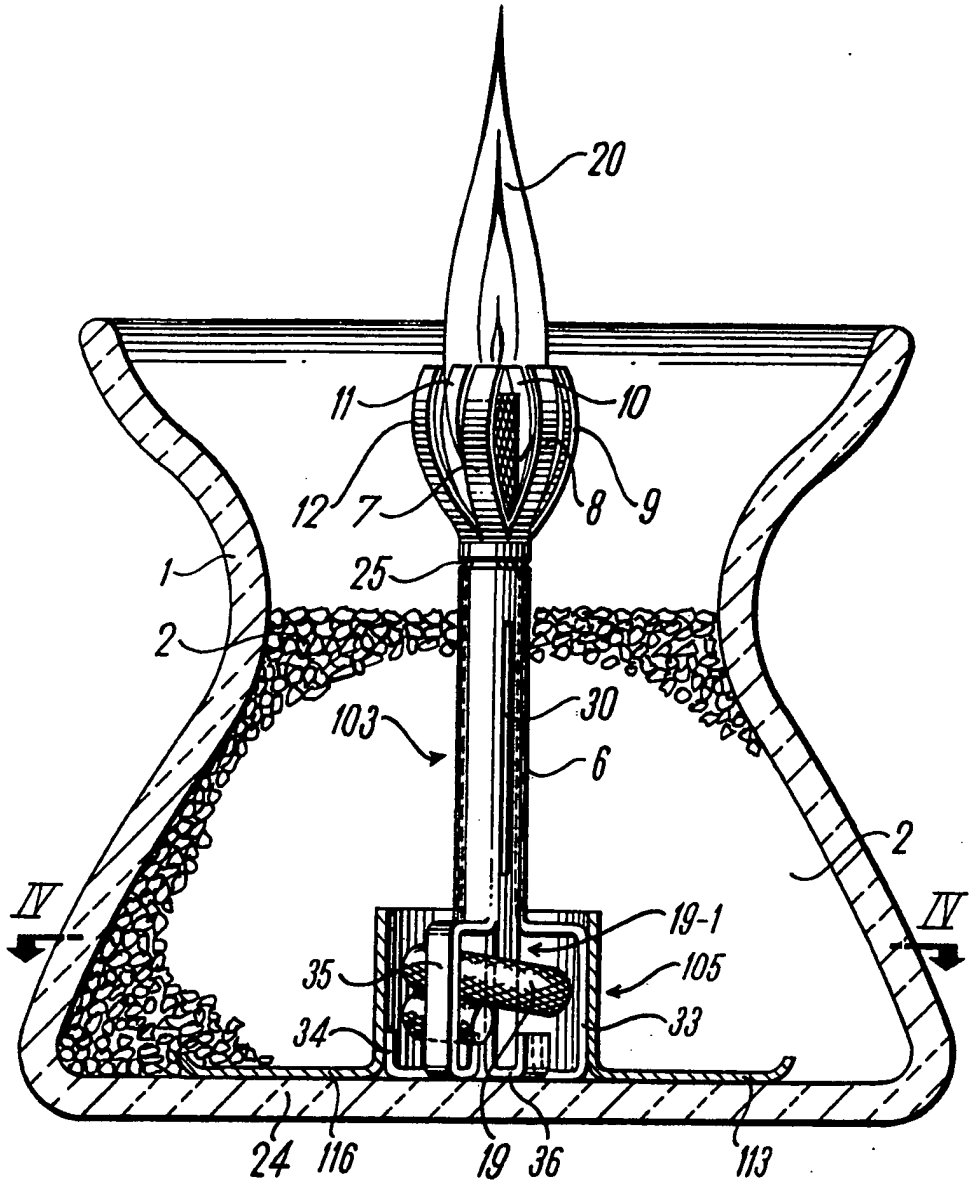
20
11
10
12
7
8
9
1
25
2
103
30
6
2
IV
IV
19-1
105
35
33
34
24
116
19
36
113

Fig.3

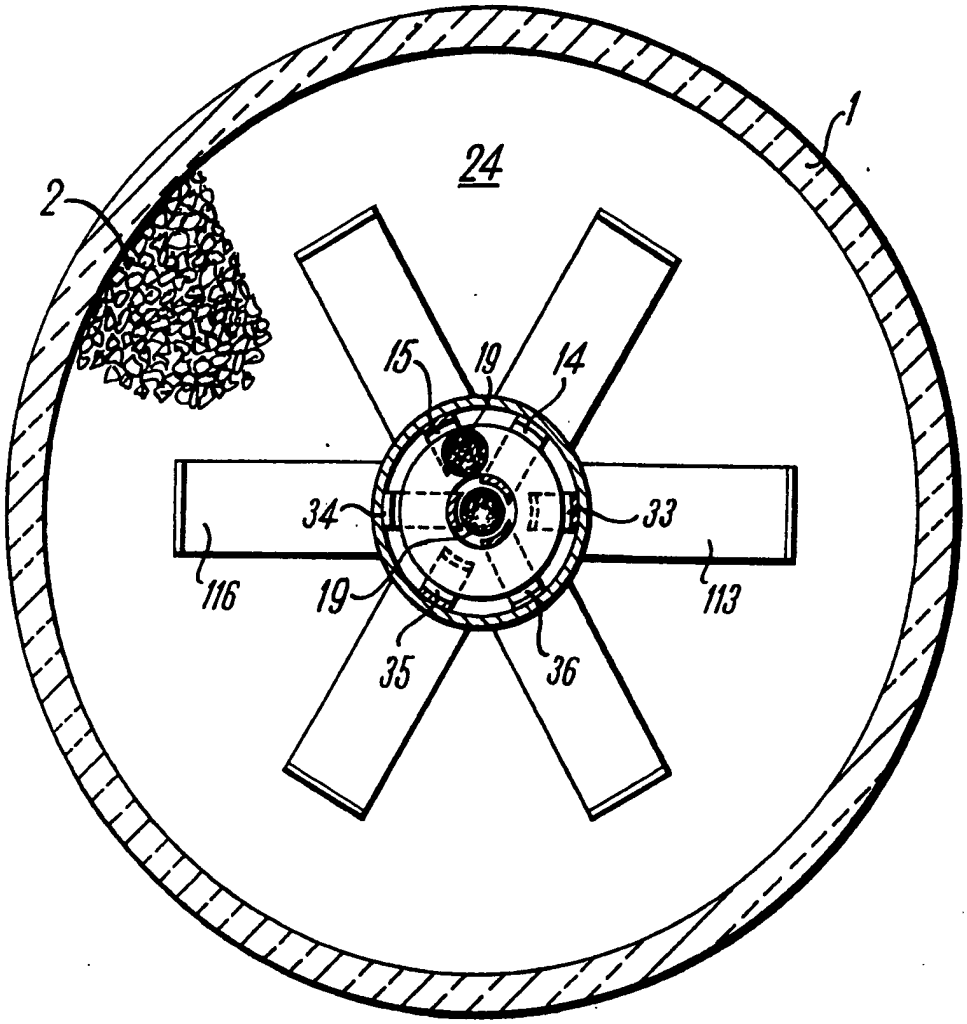

Fig.4

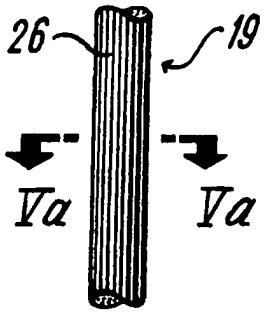

Fig.5

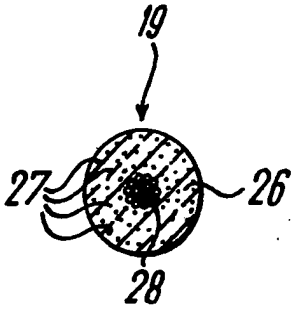

Fig.5a

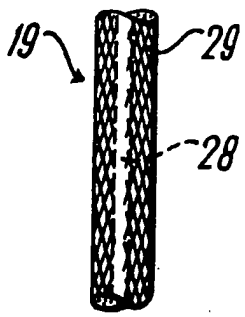

Fig.6

SPECIFICATION

Wick Holder for a Lamp and Wicks Held Therein

Background of the Invention

The present invention relates to lamps in general, and more particularly to improvement in lamps which employ wicks. Still more particularly, the invention especially relates to improvements in holders for wicks in lamps which burn wax, tallow, oil or an analogous fuel that is normally in a liquid state or can be readily liquefied by heating so that it can flow in the wick by capillary action.

It is already known to insert a wick into a tubular holder whose upper end portion has prongs disposed in the region of the flame and serving to transfer heat to the major part of the holder and thence to the mass of fuel in the receptacle of the lamp. The amount of heat which is transmitted by the prongs must suffice to ensure melting of wax or tallow at a rate such as to supply the wick with adequate quantities of molten fuel.

A drawback of presently known wick holders or supports is that the removal of a spent wick and the insertion of a fresh wick take up too much time. As a rule, the holder is anchored in the receptacle of the lamp so that it cannot be removed with a spent wick. While the extraction of a spent wick might not present serious problems, the insertion of a fresh wick is much more cumbersome. These problems have deterred many customers from purchasing lamps with removable or replaceable wicks in lieu of candles.

Another drawback of presently known lamps with replaceable wicks is that the adjustment of a wick therein also presents many problems. Thus, the wick should be inserted in such a way that it can be readily moved lengthwise in order to compensate for burning of its upper end. Moreover, the wick holder should provide adequate room for a reasonable supply of wick so that the wick need not be replaced at frequent intervals. On the other hand, the supply of spare wick should not be excessive because this contributes to the bulk of the lamp and/or takes up space which should be available for storage of fuel.

Still another drawback of presently known lamps which employ wicks is that their wick holders cannot reliably ensure adequate melting of wax, tallow or a similar liquefiable fuel while the lamp is in use so that the flame is unstable and is readily extinguishable in response to opening of a door, window or for analogous reasons. The wick holder should not be overheated because this would entail excessive transfer of heat into the interior of the fuel-containing receptacle and evaporation or carbonization of fuel. On the other hand, the temperature of the aforementioned prongs should be high enough to ensure that any droplets of fuel which come in contact therewith are combusted [illegible] that the prongs cannot accumulate deposits of carbon or the like. In other words, each and every droplet of fuel which directly contacts a prong should be converted to ashes.

Objects and Summary of the Invention

An object of the invention is to provide a novel and improved wick holder for use in lamps which burn wax, tallow, oil or like fuels and to construct and assemble the holder in such a way that it allows for rapid and convenient replacement of wicks.

Another object of the invention is to provide a novel and improved wick for use in the above outlined holder.

A further object of the invention is to provide a novel and improved lamp which utilizes the above outlined holder.

An additional object of the invention is to provide a wick holder which ensures proper transfer of heat from the region of the flame into the mass of fuel in the receptacle of the lamp.

Still another object of the invention is to provide a wick holder which is constructed and assembled in such a way that it provides adequate space for storage of a reasonable supply of spare wick without unduly reducing the space which is provided for storage of liquid or liquefiable fuel.

An additional object of the invention is to provide a wick holder which is of eye pleasing appearance, whose heat-conducting characteristics can be selected practically at will, which consists of a relatively small number of simple parts, and which can be readily installed in a practically infinite number of different receptacles for storage of liquid or liquefiable fuel.

Still another object of the invention is to provide a wick holder which ensures complete combustion of fuel that contacts the prongs, which can be rapidly taken apart and reassembled by semiskilled or unskilled persons, and which enables a wick to draw requisite quantities of liquid or liquefied fuel immediately after lighting.

A further object of the invention is to provide a combination of a novel and improved wick and a novel and improved holder therefor.

The invention resides in the provision of a lamp for combustion of fuel which can advance in or along filaments by capillary action. The lamp comprises a wick holder which includes at least substantially aligned first and second tubular sections that are separably connected to each other. The first section (which is preferably the upper section of the holder) has an end portion remote from the second section and provided with at least one heat-conducting prong. The second section (which is preferably the lower section and may be permanently or separably secured to the bottom wall of a receptacle for fuel) has an end portion which is remote from the first section and includes at least one leg which dissipates heat into the supply of fuel in the receptacle so that wax or an analogous liquefiable fuel will melt at a desired rate to thus ensure a

steady flame. The lamp further comprises a wick which extends through the first section (and preferably into the second section) of the holder and has an exposed ignitable end portion adjacent to the prong or prongs of the first section. Each of the two sections preferably consists, at least in part, of a heat-conducting metallic material.

The holder is preferably at least substantially upright, and one of its sections can be partially and separably or removably telescoped into the other section so that the end portion of the first section is located at a level above the second section. It is presently preferred to telescope the lower end portion of the first or upper section into the upper end portion of the second or lower section; however, it is equally possible to use a larger diameter upper section which then receives a portion of the smaller diameter lower section.

The leg or legs of the second section can define a chamber for storage of a supply of wick, e.g., of one, two, three or even more convolutions or loops of the wick. This renders it possible to pull the wick so as to compensate for burning of the aforementioned end portion of the wick. Alternatively, the lower end portion of the first section can be provided with one or more sets of suitably configurated fingers which define a chamber for the lower end portion of the wick and which can be moved into frictional engagement with a tubular or cylindrical portion of the second section.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The improved lamp itself, however, both as to its construction and the mode of assembling its components, together with additional features and advantages thereof, will be best understood upon perusal of the following detailed description of certain specific embodiments with reference to the accompanying drawing.

Brief Description of the Drawing

Fig. 1 is a partly elevational and partly sectional view of a wick holder which is constructed and assembled in accordance with one embodiment of the invention;

Fig. 2a is a smaller-scale central vertical sectional view of a receptacle for the wick holder, the lower section of the holder being shown in the position it assumes prior or during bonding of its legs to the bottom wall of the receptacle;

Fig. 2b shows the structure of Fig. 2a but with the outer portions of the legs bent outwardly against the upper side of the bottom wall;

Fig. 2c shows the structure of Fig. 2b as well as a supply of fragmentized wax and the upper section of the holder, the exposed upper end portion of the wick being ignited so that the flame heats the prongs of the upper section;

Fig. 3 is a central vertical sectional view of a lamp which embodies a modified wick holder;

Fig. 4 is a horizontal sectional view as seen in the direction of arrows from the line IV—IV of Fig. 3;

Fig. 5 is a fragmentary elevational view of a wick which can be used in the holder of Fig. 1 or 3;

Fig. 5a is an enlarged sectional view of the wick as seen in the direction of arrows from the line Va—Va of Fig. 5; and

Fig. 6 is a fragmentary elevational view of a modified wick.

Description of the Preferred Embodiments

Fig. 1 shows a wick holder which comprises a tubular upper section 3 and a tubular lower section 5. The lower end portion of the upper section 3 is removably or separably telescoped into the upper end portion of the lower section 5 so that it is held therein by friction. The wick holder may comprise a tubular upper section whose lower end portion receives the upper end portion of the tubular lower section. The major part of the upper section 3 includes a set of tubes which are telescoped into each other to increase the combined cross-sectional area of the respective part of the section 3. Such tubes include an outermost metallic tube 6, an intermediate metallic tube 41 and an innermost metallic tube 42. The tubes 6, 41 and 42 can be held in desired axial positions with reference to one another by frictional engagement of their abutting surfaces. The upper end portion of the intermediate tube 41 has several arcuate prongs including those shown at 7, 8, 9 and 10. These prongs are adjacent to the flame 20 (see Fig. 2c) when the upper end portion 19a of an elongated wick 19 is ignited. The wick 19 extends through the tubular sections 3, 5 and its lower portion 19b forms one or more convolutions or loops which are confined in a chamber 19-1 defined by the legs (including those denoted by the reference characters 13, 14, 15 and 16) forming part of or constituting the lower end portion of the section 5, i.e., that end portion which is remote from the section 3. The prongs 7—10 are disposed at or constitute that end portion of the section 3 which is remote from the section 5 and they serve to conduct heat via tubes 6, 41, 42 to the tube 50 of the section 5. Such heat is dissipated by the legs 13 to 16 to heat the supply of fuel (such as fragmentized or granular wax 2 shown in Fig. 2c). It can be said that the heat-conducting prongs (whose number may equal or even exceed six) form a basket which spacedly surround the flame 20. The tubes 6 and 41 have longitudinally extending slots 30 which enable such tubes to expand or contract, i.e., the tube 41 can expand during insertion of the tube 42 into its interior and the tube 6 can expand during insertion of the tube 41. The tube 50 of the lower section 5 has a longitudinally extending (axially parallel) slot 51 which allows this tube to expand during insertion of the lower end portion of the section 3. The metallic material of the tubes 6, 41 and 50 is preferably at least slightly elastic so that the tube 41 can hold the tube 42 by friction, that the tube 41 can be held by friction in the tube 6, and that the tube 6 can be held by friction in the tube 50.

The legs 13 to 16 (there may be a total of six equidistant legs) of the section 5 include substantially radially outwardly extending upper or first portions, substantially axially parallel second portions (which, with the upper portions, define the aforementioned chamber 19-1 for confinement of the wick portion 19b), substantially radially outwardly extending third portions at the lower ends of the second portions, and substantially axially parallel fourth portions which are integrally connected with the outer ends of the third portions by prefabricated articulatable joints shown at 13', 14', 15' and 16'. The joints 13', 14', 15' 16' are designed to allow the fourth portions of the legs 13 to 16 to be flexed into positions of substantial parallelism with the respective third portions. The first, second, third and fourth portions of the leg 15 are respectively denoted by the reference characters 15a, 15b, 15c and 15d. The legs 13 to 16 serve to support the holder in the interior of a receptacle 1 as well as to dissipate heat into the fuel (wax 2) which is confined in the interior of the receptacle and must melt so as to advance, by capillary action, through the wick 19 and to the space within the confines of the prongs 7 to 10 at the upper end of the section 3. As a rule, it suffices to dimension and design the legs 13 to 16 in such a way that they define a chamber (19-1) which is large enough to receive one, two or more convolutions and/or loops of the wick 19. This allows for repeated removal of charred remains of the upper end portion 19a and for pulling of increments of the wick 19 from the chamber 19-1, i.e., the overall length of the portion 19b decreases with prolonged use of the lamp.

The manner in which a lamp including the wick holder of Fig. 1 can be assembled is illustrated in Figs. 2a, 2b and 2c. The lamp comprises the aforementioned receptacle 1 which may consist of a suitable ceramic material and has a flat or substantially flat bottom wall 24 which is horizontal or substantially horizontal when the lamp is in use. The upper side of the bottom wall 24 and/or the third and fourth portions of the legs 13 to 16 are coated with a suitable bonding agent 40, e.g., a silicon glue, which can permanently secure the lower section 5 of the wick holder to the receptacle 1. The section 5 is inserted into the receptacle 1 in such a way that an extension of the axis of its tube 50 intersects the center of the bottom wall 24. The third portions of the legs 13 to 16 immediately adhere to the upper side of the bottom wall 24, and the fourth portions of such legs may but need not necessarily adhere to the bottom wall upon flexing at the joints 13' to 16', e.g. by a resorting to a suitable tool 49 which is indicated in Fig. 2a by broken lines and may constitute a screwdriver or the like. The fully installed lower section 5 of the wick holder is shown in Fig. 2b. In the next step, the person in charge introduces a length of wick 19 into the innermost tube 42 of the upper section 3 so that the end portion 19a of such wick is confined (19b) of the wick extends beyond that end portion of the section 3 which is remote from the prongs 7 to 10. The wick portion 19b is thereupon introduced into the interior of the tube 50 and into the chamber 19-1 while the lower end portion of the tube 6 is inserted into the upper end portion of the tube 50. The supply of fuel 2 can be introduced after completed assembly of the wick holder, and the end portion 19a of the wick can be ignited to produce a flame 20 (shown in Fig. 2c) which heats the prongs 7—10 and causes them to heat the tubes 6, 41, 42, 50 and legs 13—16 whereby the legs heat the bottom wall 24 and the adjacent fragments or layers of the fuel 2.

Figs. 2a to 2c show that the illustrated receptacle 1 is a vessel which resembles a vase and has a large-diameter lower portion 1a so as to provide ample room for outward flexing of fourth portions of the legs 13—16. This ensures the transfer of heat to a relatively large portion of fuel which is confined in the receptacle 1. Such fuel need not be wax but may also consist of tallow, oil or any other fuel which is liquid or can be liquefied by heating so as to be capable of advancing toward the locus of the flame 20 by capillary action. The prongs 7 to 10 may consist of readily flexible material so that they can be moved nearer to or further away from the flame 20 in order to ensure adequate transfer of heat to the supply of fuel in the receptacle 1. Melting begins practically instantaneously because the tubes 6 and 50 can heat the adjacent particles or fragments of fuel which melts and flows into the slots 51 and 30 to reach the wick 19 and to propagate itself by capillary action toward and into the end portion 19a of the wick 19. As mentioned above, the slots 30 and 51 serve the additional purpose of facilitating insertion of tubes 42, 41 into the tubes 41, 6 and to facilitate insertion of the tube 6 into the tube 50. As also mentioned above, the tubes 41 and 42 serve to increase the cross-sectional area of the section 3 in the region below the prongs 7 to 10 and to thus ensure the transfer of adequate quantities of heat to the supply of fuel 2 in the receptacle 1. Furthermore, the composite tube 6, 41, 42 ensures that the non-inserted portion of the tube 6 (i.e., that portion which extends above and beyond the tube 50 of the lower section 5) is not overheated and does not cause carbonizing of the surrounding particles or fragments of fuel 2. The thickness of prongs 7 to 10 is or may be substantially less than the thickness of the composite tube 6, 41, 42 so that the temperature of the prongs can be readily raised by the flame 20 when the lamp is in use. Such heating of prongs 7 to 10 to an elevated temperature is desirable on the additional ground that any fuel which comes in direct contact with the prongs is fully combusted (i.e., it is converted into ashes) without carbonization which could result in accumulations of partly burned fuel on the prongs and would entail a reduction of heat transfer to

In the embodiment of Figs. 3 and 4, the upper section 103 of the wick holder has a lower end portion which includes a basket-like array of fingers numbered 33, 34, 35 and 36. These fingers define a chamber 19-1 with many windows for reception of one, two or more loops or convolutions of the wick 19, namely, of the lower portion 19b of the wick. A first set or group of fingers includes those shown at 34, 36, and each of these fingers has a first portion which is substantially parallel with the axis of the tube6, a second portion which extends radially outwardly at the lower end of the first portion, and a third portion which extends upwardly fom the second portion in parallelism with the first portion. Note the portions 36a, 36b and 36c of the finger 36. A second set or group of fingers includes those numbered 33 and 35; each of these fingers includes a first portion (see 33a) which extends radially outwardly from the tube 6, a second portion (see 33b) which extends downwardly from the first portion and is parallel our nearly parallel to the axis of the tube, and a third portion (see 33c) which extends inwardly from the second portion and toward the imaginary extension of the axis of the tube 6. The second portions of the fingers 34, 36 flank the chamber 19-1 from within, and the second portions of the fingers 33, 35 flank the chamber 19-1 from without; the second portions of fingers 33, 35 and the third portions of fingers 34, 36 have relatively large external surfaces which frictionally engage the cylindrical internal surface of the tube 21 forming part of the lower or second section 105 of the wick holder. The second section 105 further comprises radially outwardly extending legs 113 and 116 whose undersides are bonded or otherwise permanently or separably connected to the bottom wall 24 of the receptacle 1.

In the embodiment of Figs. 3 and 4, the upper section 103 has six equidistant prongs which are denoted by the reference characters 7, 8, 9, 10, 11 and 12. These prongs surround and are heated by the lower part of the flame 20 when the lamp embodying the wick holder is in use. The purpose of the prongs 7—12 is to convey heat to the tubes 6, 21 and the purpose of the legs 113, 116 is to dissipate heat into the supply of fuel 2 which is confined in the receptacle 1. The chamber 19-1 between the fingers 33 to 36 is large enough to accommodate a relatively large supply of spare wick so that the wick can be repeatedly pulled upwardly after clipping of its upper end portion 19a to remove burnt portions of its filaments.

The material of the fingers 33 to 36 is sufficiently elastic to allow for convenient insertion of these fingers into the tube 21 of the lower section 105 as well as to ensure adequate frictional engagement between the external surfaces of certain portions of the fingers and the internal surface of the tube 21. Such frictional engagement also ensures satisfactory transfer of heat from the fingers 33—36 to the tube 21 and legs 113, 116. Adequate heating of the legs 113, 116 is desirable and advantageous because this ensures heating and melting of fuel in the lower portion of the receptacle 1, i.e., in a region which normally would remain cold and would prevent flow of molten wax, tallow or analogous fuel into the range of the wick 19.

The upper portion of the tube 6 forming part of the upper section 103 is formed with a circumferentially complete groove 25 above the slot 30. The groove 25 reduces the cross-sectional area of the respective portion of the section 103 so as to reduce the rate of heat transfer from the prongs 7 to 12 toward the lower section 105. The groove 25 can be formed by removing material at the external surface of the tube 6. It will be noted that this groove is disposed at a level above the upper surface of the mass of wax 2 in the receptacle 1; therefore, the lower portion of the tube 6 (below the groove 25) cannot be heated to such an extent that it would carbonize the adjacent fragments of fuel. By properly selecting the depth of the groove 25, the material of the tube 6 and/or a combination of these parameters, one can ensure optimum heating of the tube 6 in the region where its external surface comes in direct contact with fuel in the receptacle 1.

Figs. 5 and 5a illustrate a portion of one of the wicks 19 which can be utilized in the lamp embodying the improved wick holder. This wick is formed by a large number of parallel or substantially parallel glass fibers 26 which are preferably saturated with wax prior to insertion into the tube or tubes of the upper holder section 3 or 103 so that the thus soaked fibers adhere to each other. It is preferred to twist the fibers 26 so that at least some thereof constitute spirals surrounding the axis of the wick 19.

Fig. 5a shows that the wick 19 further contains thin metallic wires 27 of copper, aluminum or another metallic material which is a good or reasonably good conductor or heat. The reference character 28 denotes a core which consists of closely adjacent metallic wires. The purpose of metallic wires 27 is to enhance the heat conductivity of the wick 19; this is particularly important during lighting, i.e., the metallic inserts of the wick 19 cause practically instantaneous melting of a certain quantity of wax which is then caused to flow toward the flame 20. Moreover, the metallic wires 27 ensure uninterrupted satisfactory heating of the wax in and around the wick 19 so that the flame 20 is not extinguished. An additional advantageous feature of metallic wires 27 is that they reduce the likelihood of smoking of the wick 19 after extinguishment of the flame 20; this is attributable to the heat compensating effect of the wires.

Fig. 6 illustrates a portion of a modified wick 119 which has an outer part or network consisting of interwoven or interlaced glass fibers 29 surrounding a core 28 of metallic wires, e.g., small-diameter copper wires.

Each of the wicks which are contemplated for use in the improved holder is preferably designed in such a way that its filaments form capillary

spaces to ensure the flow of molten or liquid fuel toward the exposed upper end portion of a properly inserted wick. As stated above, the fuel may be wax, tallow, oil or any other fuel which is normally liquid or which is liquefiable by heating.

An important advantage of the improved wick holder is that a section or portion thereof can be permanently installed in the receptacle of the lamp without interfering with rapid and convenient replacement of a spent wick. Thus, all the user has to do is to extract the upper section 3 or 103 from the lower section 5 or 105 whereby the spent wick is readily removable from the upper section and can be replaced with a fresh wick. The replacement of a spent wick is especially simple if the holder is constructed in a manner as shown in Figs. 3 and 4 because this enables the person in charge to observe the accumulation of coils of a freshly inserted wick in the chamber 19-1 which is defined by component parts of the extracted or separated section 103, i.e., by the fingers 33 to 36.

Another important advantage of the improved wick holder and of a lamp which embodies such wick holder is that the rate of heat transfer from the prongs 7—10 or 7—12 to the supply of fuel in the receptacle 1 can be selected practically at will by appropriate selection of the combined thickness of tubes forming part of the upper section, by appropriate selection of the material of the holder, by appropriate selection of the dimensions of the prongs, by appropriate selection of separable connection between the upper and lower sections of the holder and/or by a combination of such features.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic and specific aspects of my contribution to the art and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the appended claims.

Claims

1. In a lamp for combustion of wax, oil or another fuel which can advance in or along filaments by capillary action, the combination of a wick holder comprising at least substantially aligned first and second tubular sections which are separably connected to each other, said first section having an end portion remote from said second section and including at least one heat-conducting prong, said second section having an end portion remote from said first section and including at least one heat-dissipating leg; and an elongated wick extending through said first section and having an exposed ignitable end portion adjacent to said prong.

2. The combination of claim 1, wherein each of said sections consists, at least in part, of a heat-

3. The combination of claim 2, wherein said holder is at least substantially upright and one of said sections is partially and separably telescoped into the other of said sections, said end portion of said first section being located at a level above said second section.

4. The combination of claim 1, wherein said end portion of said second section includes a plurality of legs defining a chamber, said wick having a second portion which is confined in said chamber.

5. The combination of claim 4, wherein said chamber resembles the interior of a basket and said second section further includes a tube adjacent to said chamber and separably connected with said first section, said legs having first portions extending substantially radially outwardly from and second portions substantially parallel to the axis of said tube.

6. The combination of claim 5, wherein said legs further comprise third portions extending substantially radially outwardly from said tube, said second portions being located between said first and third portions of the respective legs.

7. The combination of claim 1, wherein said leg has at least one articulatable joint so that it is readily flexible at such joint.

8. The combination of claim 1, wherein said first section has a second end portion which is separably telescoped into said second section, said second end portion defining a chamber and said wick having a second portion which is confined in said chamber.

9. The combination of claim 8, wherein said chamber has a plurality of windows.

10. The combination of claim 9, wherein said second end portion has a plurality of elastic fingers at least some of which surround said chamber, said second section having an internal surface which is engaged by at least some of said fingers to thereby couple said sections to each other.

11. The combination of claim 10, wherein said fingers have relatively large external surfaces bearing against said internal surface.

12. The combination of claim 10, wherein said fingers include a first set whose fingers confine said chamber from within and a second set whose fingers confine said chamber from without.

13. The combination of claim 12, wherein the fingers of said first set have first portions extending in substantial parallelism with the axis of said first section and second portions extending substantially radially of said first section and outwardly from the respective first portions, the fingers of said second set having first portions extending substantially radially outwardly of said first section and second portions extending in substantial parallelism with the axis of said first section, each of said first portions of said second set of fingers being disposed between said axis and the respective second portion.

14. The combination of claim 1, wherein at least one of said sections has a portion of reduced

cross-sectional area and resulting lower heat-conductivity.

15. The combination of claim 14, wherein said portion of reduced cross-sectional area is part of said first section and has at least one substantially circumferentially extending groove.

16. The combination of claim 1, wherein at least one of said sections includes a plurality of tubes which are telescoped into each other and consist, at least in part, of heat-conducting metallic material.

17. The combination of claim 16, wherein said one section is said first section.

18. The combination of claim 1, wherein at least one of said sections has at least one substantially longitudinally extending slot to enhance the expandibility and contractibility of such section.

19. The combination of claim 18, wherein one of said sections is partially and separably telescoped into the other of said sections and said slot is located in the region of the telescopic connection between said sections.

20. The combination of claim 18, wherein said one section is said first section.

21. The combination of claim 18, wherein said one section is said second section.

22. The combination of claim 1, wherein said wick includes twisted filaments.

23. The combination of claim 1, wherein said wick includes filaments and metallic wires.

24. The combination of claim 1, wherein said wick includes interwoven filaments.

25. The combination of claim 1, further comprising a fuel-containing receptacle for said holder.

26. The combination of claim 25, wherein said receptacle has a bottom wall and further comprising means for bonding said second section to said bottom wall.

27. The combination of claim 26, wherein said second section has a plurality of legs at least some of which are bonded to said bottom wall.

28. A wick insert for a container vessel with a burnable mass, preferably wax, and comprising a metallic tube which is open at the top and bottom and receives the wick, this tube having at its upper end heat-conducting strips surrounding the end of the wick and at its lower end support and heat-conducting strips, characterised by the fact that the tube is in two parts consisting of a push-in section (3) and a push-in reception section (5) provided with the support and heat-conducting strips (13—16), on which latter section the push-in section (3) is mounted.

29. A wick insert in accordance with Claim 28, characterised by the fact that the lower support and heat-conducting strips (13—16) are radially enlarged and then bent radially outwards to form an enlarged reception space (19') for the lower end of the wick (19).

30. A wick insert in accordance with Claim 28 or 29, characterised by the fact that the support and heat-conducting strips (13—16) have bend facilitating zones (13'—16').

31. A wick insert in accordance with Claim 28, characterized by the fact that the push-in section (103) is provided at its lower end with radially enlarged strips (33—36) constituting a wick-accommodating chamber (19—1) which strips can be pushed into the support and heat-conducting strips (113, 116) having the push-in accommmdating part (105) so as to bear resiliently and over a substantial surface against the same.

32. A wick insert in accordance with Claim 31, characterised by the fact that a number (33—35) of the strips provided at the lower part of the push-in section (103) extend radially outwards and then vertically downwards and others (34—36) extend vertically downwards and then radially outwards, so that the first-mentioned strips (33—35) constitute an outer boundary to the wick-accommodating chamber (19—1) and the second mentioned strips (34—36) form a boundary to the interior of this chamber.

33. A wick insert in accordance with Claim 28, characterised by the fact that a peripheral groove (25) is provided at the upper end of the tube (6) constituting the push-in section (103) and this reduces the heat-conducting cross section of the tube.

34. A wick insert in accordance with any of Claims 28 to 33, characterised by the fact that the tube (6) constituting the push-in section (3) is reinforced by at least one further tube (41, 42) to increase the heat-conducting cross section.

35. A wick insert in accordance with any of Claims 28 to 34, characterised by the fact that the tube (6) constituting the push-in section (3) is provided with a slot (30).

36. A wick insert in accordance with any of Claims 28 to 35, characterised by the fact that the part (50) of the push-in section (5) of tubular form is provided with a slot.

37. A wick insert in accordance with any of Claims 28 to 36, characterised by the fact that the wick (19) is formed by fibres (26) twisted together.

38. A wick insert in accordance with Claim 37, characterised by the fact that the wick (19) is formed by fibres (26) with metal wires (27) incorporated therein.

39. A wick insert in accordance with Claim 34, characterised by the fact that the wick (19) is formed by interwoven fibres (28, 29).

40. A lamp characterised by the fact that it comprises a wick insert in accordance with any of Claims 28—39 inserted in a container (1).

41. A lamp in accordance with Claim 40, characterised by the fact that the wick insert section (5) is cemented to the bottom (24) of the container.

42. Lamps with a wick substantially as described herein with reference to the accompanying drawings.

43. Wick holders substantially as hereinbefore described with reference to the accompanying drawings.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1982. Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☑ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.
As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.